Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Old Formula.	New Formula.
Stephanite.	
$5AgS + Sb_2S_3$	$Ag_5^{I} \equiv S_5^{II} \equiv Sb^{V}$ $Ag_5^{I}Sb^{V}S_5^{II}$

Note—Dana's first record of analysis by H. Rose gives atomic ratio of Sb : S : Ag : : 1 : 4.2 : 5.2, but the indications are of a compound as above.

Sartorite.	
$PbS + Sb_2S_3$	$Pb^{II} = S_2^{II} = Sb_2^{III} \equiv S_2^{II}$ $Pb^{II}(Sb^{III}S_2^{II})_2$

Brochantite.

From Forchhammer's Analysis (D 3).

$(3CuO.SO_3)_2 + CuO.HO$ The ratio of

$Cu : O : S : H : : 3 : 9 : 1 : 6$

hence

$Cu_2^{II} \equiv O_4^{II} \equiv S^{VI} = O_2^{II} = Cu^{II} +$

$+ aq$

hence $Cu_3^{II}S^{VI}O_6^{II} + (H_2O)_3$

Change of Habit in Smilacina bifolia.—Mr. Thomas Meehan remarked that this plant, as was well known, was usually terrestrial, preferring generally the vicinity of large trees. It propagates itself by underground stolons, advancing but a few inches each season; the stolons of the preceding year dying as soon as a new one was made. He had recently seen a case where the stolons had advanced from the ground, and up the trunk of a large chestnut tree, to the height of about two feet; the original stolons for several years back having died away, and the plant taken in a purely epiphytal character. The roots and stolons mostly had penetrated the coarse, rough bark of the chestnut tree, the leaves only being chiefly visible. The fact is trifling, and in old times, perhaps, hardly worth recording; but in these days, when the change of character in connection with the evolution of form had such a general interest, even this was worth recording.

July 14.

The President, Dr. Ruschenberger, in the chair.

Seven members present.

The following papers were presented for publication:—

"On Fertilization of certain Flowers through Insect Agency, and other Matters Botanical." By Thos. G. Gentry.

"Description of a new species of Helix." By Jas. Lewis, M.D.

"On some Batrachia and Nematognathi brought from the Upper Amazon by Prof. Orton." By Edw. D. Cope.

The resignation of Mr. N. E. Macomber as a member of the Academy was offered and accepted.

Prof. Cope stated that the snakes of the genus *Storeria*, B. and G., are viviparous like *Eutænia* and other tropidonotine genera to which they are allied. He had frequently made this observation, but had not placed it on record so far as he knew. He also stated that the Colorado potato beetle had probably terminated in its eastern migration, as it had appeared pretty well distributed in New Jersey the present season.

Prof. Cope gave a synopsis of the result of his work in connection with Hayden's United States Geological Survey of the Territories during the season of 1873. He stated that the investigation covered principally the paleontology of the cretaceous, eocene, miocene, and pliocene periods in Colorado. The whole number of species of vertebrata obtained was one hundred and fifty, of which ninety-five were at the time new to science. The cretaceous species were both terrestrial and marine, and the miocene were most numerous. These numbered seventy-five species, of which fifty-seven were new. They embraced, as especial additions to the fauna, numerous reptiles and *Mammalia* of all the orders, especially *Insectivora*, *Rodentia*, and *Carnivora*. Important additions were the gigantic horned *Symborodons*, and numerous very small ruminants allied to the *Tragulidæ*. He stated that the discovery of the latter added a stronger resemblance to the miocene of France than had been heretofore supposed to exist. The existence of *Elotherium* and *Anchitherium* gave the fauna somewhat older facies than that of France.

He stated that the only genus of lizards that could be well analyzed is the *Peltosaurus*, Cope, and that this proves to be a member of the existing family of *Gerrhonotidæ*, which is now confined to Mexico and California. Hence, like many rodents, but unlike the higher mammalia, these miocene lizards had continued with but little modification to the present day.

He also discussed the age of the Bridger eocene, stating that it had been originally termed miocene by the geologists of King's survey, and later lower miocene, or upper eocene, by Marsh. He had published it as eocene in 1872, and contended that it presented features which indicate a somewhat earlier age than that of the Paris basin. He said that there were numerous parallels of corresponding genera in the two; the *Mesonyx*, *Palæosyops*, *Hyrachyus*, *Achænodon*, *Hyopsodus*, and *Anaptomorphus*, of the Bridger formation, represented the *Hyænodon*, *Palæotherium*, *Lophiodon*, *Anthracotherium*, *Hyracotherium*, and *Adapis* of the Paris basin respectively. The former was, however, entirely peculiar in its *Eobasiliidæ*, *Bathmodontidæ*, and *Anchippodontidæ*, and in its almost entire want of artiodactyles (none with crescent-bearing teeth), while the French eocene possessed non-ruminating artiodactyles, with crescent-bearing teeth, in its numerous *Anoplotheriidæ* and *Hyopotamidæ*. He concluded that there were good reasons for regarding the facies as older than that of the Paris basin.

July 21.

The President, Dr. Ruschenberger, in the chair.

Nine members present.

Prof. Persifor Frazer, Jr., made the following remarks: The coal-cutting machine, designed by Mr. Jas. Brown, of Brazil, Ind., and photographs of which were kindly sent me by the inventor, and are herewith offered for the inspection of the members, consists of a steel or iron wheel set in a frame, connected with the pneumatic engine, which runs in rails laid parallel to the face of the heading, which in this case may be several hundred yards long.

On the outer periphery of this wheel are arranged twenty or thirty triangular-shaped pieces of steel, united with it at one of their apices by a pin. In the middle of the opposite side, which is curved, are firmly fixed chilled-steel teeth, which set themselves by friction against the coal to the proper position for cutting, as the wheel is rotated to the right or left. The motion is imparted by means of a small-toothed wheel which moves in rackwork on the under surface of the wheel.

The machine is suitable for the soft coals of jointed structure (*i. e.*, the black coals), and is operated by causing the machine to revolve against the face of an exposure, and at the same time draw itself forward, by means of a rack and pinion attachment, to a middle rail. When it has undercut the coal as far as it can, it is caused to move sideways along the pair of rails first mentioned until it has cut a channel an inch or two high, four and a half feet deep, and as long as the breadth of the heading. The blocks of coal are thus separated from the rest, except on two sides, viz., the upper and the rear sides, and a skilful miner can knock down with the pick huge cubical blocks, which are comparatively regular, and suffer less loss by attrition in transportation.

As in all pneumatic machines the escaped air aids materially in ventilating the mine.